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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,077	03/30/2004	Kazushi Yamaguchi	040052	3015
23850	7590	10/03/2005	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP			VERBITSKY, GAIL KAPLAN	
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SUITE 1000			PAPER NUMBER	
WASHINGTON, DC 20006			2859	

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/812,077

Applicant(s)

YAMAGUCHI ET AL.

Examiner

Gail Verbitsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03/30/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: "includ[e]ing" in line 7 should be replaced with –including–. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa et al. (U.S. 6146320) [hereinafter Yoshikawa] in view of Nakamura et al. (U.S. 6567638) [hereinafter Nakamura].

Yoshikawa discloses in Fig. 1 a device comprising a shaft 1, an innermost layer 2, an outer layer 4 and an intermediate layer 3. The intermediate layer comprises an ion conducting agent and a carbon black.

Yoshikawa does not explicitly teach the particular resistivity of the intermediate and the outer layers, as stated in claim 1, and the particular amount of the ionic conductive agent and of carbon black in the intermediate layer, as stated in claim 2.

Nakamura teaches in Fig. 2 a device in the field of applicant's endeavor that, in order to regulate resistivity of the layer, the amount of the conductive additives (col. 6, lines 50-52) can be controlled/ regulated. Thus, in a broad sense, Nakamura teaches to achieve any resistivity, including the claimed resistivity by regulating the amount of the

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conductive additives (ionic conductive agent and carbon black). This would imply, that, in order to make the resistivity claimed by applicant, one should, among other, adjust the amount of the ionic agent and the carbon black, as claimed by applicant in claim 2.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Yoshikawa, so as to adjust the carbon black and ionic conductive agent, such that to obtain any desirable resistivity of the layers, as taught by Nakamura, including the resistivity, as claimed, because the particular resistivity, absent any criticality, is only considered to be the "optimum" amount of resistivity that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the device, disclosed by Yoshikawa, since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Yoshikawa, so as to adjust the carbon black and ionic conductive agent, such that to obtain any desirable resistivity of the layers, as taught by Nakamura, including the desired claimed resistivity ($10^6 \text{ ohm} \cdot \text{cm}$ and 10^7 - $10^{13} \text{ ohm} \cdot \text{cm}$, and the amount 0.5-10 wt parts of the ionic conductive agent and 20-50 wt parts of carbon black), because the particular volume resistivity, absent any criticality, is only considered to be the "optimum" amount of resistivity that a person having ordinary skill in the art at the time the invention was

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made using routine experimentation would have found obvious to provide for the layers disclosed by Ishii since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

Also, the particular amount of the ionic conductive agent and carbon black, i.e., 0.5-10 wt parts of the ionic conductive agent and 20-50 wt parts of carbon black), absent any criticality, is only considered to be the "preferred" or "optimum" amount of additives that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the desired volume resistivity, etc. See in re Boesch, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the additive of 0.5-10 wt parts of the ionic conductive agent and 20-50 wt parts of carbon black, so as to obtain a desired volume resistivity.

4. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al. (U.S. 5925893) [hereinafter Ishii] in view of prior art by Law et al. (U.S. 5753317) [hereinafter Prior art].

Ishii discloses in Figs. 2A-2B a device comprising a shaft, an innermost layer, an outer layer and an intermediate layer 2c or 3c. Ishii states that volume resistivity (col. 7, lines 17-18) of the layers can be controlled to a desired resistivity by adding a fluorinated carbon (carbon black) or ionic conductive agent to the intermediate layer. The intermediate layer comprising an ion conducting agent or carbon black. Ishii teaches to add about 5-65 weight percent of carbon black. Ishii also states that the

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additives can be added onto the outer layer, thus, in a broad sense, suggesting that the resistivity of these layers can be controlled to a desired resistivity.

Ishii does not explicitly suggest to add both ionic conductive agent and carbon black to an intermediate layer, as stated in claim 1, with the remaining limitations of claims 1-2.

Prior Art discloses a device in the field of applicant's endeavor. Law states that it is known in the art to attempt to control resistivity by adding ionic and carbon black additives to a component layers.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Ishii, so as to add both, carbon black and ionic conductive agent, to the intermediate layer (and the outer layer), as taught by the Prior art, so as to obtain any desirable volume resistivity of the layers, including the claimed volume resistivity, as very well known in the art, as suggested by the Prior art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Ishii, so as to adjust the carbon black and ionic conductive agent, such that to obtain any desirable resistivity of the layers, as taught by Prior Art, including the desired claimed resistivity (10^6 ohmxcn and 10^7 - 10^{13} ohmxcn, and the amount 0.5-10 wt parts of the ionic conductive agent and 20-50 wt parts of carbon black), because the particular volume resistivity, absent any criticality, is only considered to be the "optimum" amount of resistivity that a person having ordinary skill in the art at the time the invention was made using routine

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experimentation would have found obvious to provide for the layers disclosed by Ishii since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

Also, the particular amount of the ionic conductive agent and carbon black, i.e., 0.5-10 wt parts of the ionic conductive agent and 20-50 wt parts of carbon black), absent any criticality, is only considered to be the "preferred" or "optimum" amount of additives that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the desired volume resistivity, etc. See in re Boesch, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the additive of 0.5-10 wt parts of the ionic conductive agent and 20-50 wt parts of carbon black, so as to obtain a desired volume resistivity.

5. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over of Nakamura et al. (U.S. 6567638) [hereinafter Nakamura] in view of Ishii.

Nakamura teaches in Fig. 2 a device in the field of applicant's endeavor comprising an outer layer, an intermediate layer 2, a shaft 1 and states that, in order to regulate a volume resistance of a layer, the amount of conductive additives (col. 6, lines 50-52). Thus, in a broad sense, Nakamura teaches to achieve any volume resistivity, including the claimed resistance by regulating the amount of the conductive additives (ionic conductive agent and carbon black) to the intermediate layer. This would imply, that, in order to make the resistance claimed by applicant, one should, among other,

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adjust the amount of the ionic agent and the carbon black, as claimed by applicant in claim 2.

Nakamura does not explicitly teach an inner layer, the particular amount of resistance of the intermediate and the outer layers, as stated in claim 1, and the particular amount of the ionic conductive agent and of carbon black in the intermediate layer, as stated in claim 2.

Ishii discloses in Figs. 2A-2B a device comprising a shaft, an innermost layer, an outer layer and an intermediate layer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Nakamura, so as to have an inner layer, as taught by Ishii, in order to have a layer between a shaft and the intermediate layer, so as to protect the conductive intermediate layer from the shaft and avoid short circuit.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Nakamura, so as to adjust the carbon black and ionic conductive agent, such that to obtain any desirable resistivity of the layers, as taught by Ishii, including the desired claimed resistivity ($10^6 \text{ ohm} \cdot \text{cm}$ and 10^7 - $10^{13} \text{ ohm} \cdot \text{cm}$, and the amount 0.5-10 wt parts of the ionic conductive agent and 20-50 wt parts of carbon black), because the particular volume resistivity, absent any criticality, is only considered to be the "optimum" amount of resistivity that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the layers

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disclosed by Ishii since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

Also, the particular amount of the ionic conductive agent and carbon black, i.e., 0.5-10 wt parts of the ionic conductive agent and 20-50 wt parts of carbon black), absent any criticality, is only considered to be the "preferred" or "optimum" amount of additives that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the desired volume resistivity, etc. See in re Boesch, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the additive of 0.5-10 wt parts of the ionic conductive agent and 20-50 wt parts of carbon black, so as to obtain a desired volume resistivity.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571/ 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GKV

Gail Verbitsky
Primary Patent Examiner, TC 2800



September 19, 2005